

Claims

What is claimed is:

1. A machine for piercing sheets of material comprising:

an adjustable apparatus that can be moved by hand;

the adjustable apparatus acts as a stop to the moveable cutting die

containing the punch pattern thereby varying the amount of the punch pattern cut into a sheet of material being punched;

the moveable cutting die is designed with a cutting surface so that said adjustable apparatus can limit the amount of said sheet of said material cut by said cutting surface;

the adjustable apparatus can be moved to a position so that said designed pattern of said punch is cut fully out of said sheet of said material by the movement of said moveable cutting die;

a frame which holds said adjustable apparatus and said moveable punch cutting die with said moveable cutting die held in the top of said frame and a hole corresponding to said moveable cutting die in the base of said frame wherein said frame aligns said moveable cutting die to said hole allowing for said moveable cutting die to be moved through said hole;

a slot in said frame with said slot extending partially through said frame to accept and restrain said sheet of said material prior to said sheet of said material being punched;

a means to activate said moveable cutting die moving said cutting die to

where it contacts said sheet of said material in said slot cutting said sheet of said material;

and a spring installed within said frame to return said moveable cutting die to a starting position allowing easy removal of said sheet of said material.

2. A machine for piercing sheets of material as claimed in claim 1 wherein said cutting surface is formed in a curved shape.

3. A machine for piercing sheets of material as claimed in claim 1 wherein said cutting surface is formed in a line at an angle to the top surface of said sheet of said paper.

4. A machine for piercing sheets of material as claimed in claim 1 wherein said adjustable apparatus is a threaded ring and said means to push down said moveable cutting die is threaded to match the threads on said threaded ring thereby allowing said threaded ring to be rotated and moved up and down along said means thereby adjusting and controlling the amount of travel of said moveable cutting die and acting as said stop.

5. A machine for piercing sheets of material as claimed in claim 1 wherein said adjustable apparatus is a threaded piece of hardware that is located in a matching threaded insert attached to said frame such that said threaded piece of hardware can be rotated within said threaded insert moving said threaded piece of hardware up and down thereby adjusting and controlling the amount of travel of said moveable cutting die and acting as said stop.

6. A machine for piercing sheets of material as claimed in claim 1 wherein said adjustable apparatus are a set of shims of varying thickness with said shims sized to fit said frame wherein some of said set of shims are selected to allow the desired travel of said moveable cutting die and said selected shims are placed on said frame in such a way that said selected shims act as said stop.

7. A machine for piercing sheets of material as claimed in claim 1 wherein said means to activate said moveable cutting die is a button in contact with said moveable cutting die thereby creating the necessary motion of said moveable cutting die when said button is pushed.

8. A machine for piercing sheets of material as claimed in claim 7 wherein said button is held against the force created by said spring by portions of said button.

9. A machine for piercing sheets of material as claimed in claim 1 wherein said means to activate said moveable cutting die is a thumb controlled lever in contact with said moveable cutting die thereby creating the necessary motion when said lever is pushed by said thumb and wherein said lever is held against the force created by said spring by portions of said frame.

10. A machine for piercing sheets of material as claimed in claim 1 wherein said frame consists of two arms designed to be held in the hand and squeezed to activate the moveable cutting die thereby creating the necessary motion when said two arms are squeezed.

11. A machine for piercing sheets of material as claimed in claim 1 further comprising a housing to enclose said frame and a portion of said means of activating said moveable cutting die.

12. A machine for piercing sheets of material as claimed in claim 11 wherein a portion of said adjustable apparatus is fabricated as a part of said housing.

13. A machine for piercing sheets of material as claimed in claim 1 further comprising a locking hinge mechanism located at said base of said machine where said locking hinge mechanism allows said base to be moved away from the rest of said machine following said material piercing thereby allowing for easy release of said material and said locking hinge mechanism then allows said base to be returned to the original starting position.

14. A machine for piercing sheets of material as claimed in claim 1 wherein said base of said frame contains two of said slots for said sheets of material.

15. A machine for piercing sheets of material as claimed in claim 1 wherein said moveable cutting die and said corresponding hole can be removed from said machine and replaced with another moveable cutting die with another corresponding hole.

16. A machine for piercing sheets of material comprising:
an adjustable apparatus that can be moved by hand;
the adjustable apparatus acts as a stop to the moveable cutting die
containing the punch pattern thereby varying the amount of the punch pattern cut into a

sheet of material being punched;

the moveable cutting die is designed with a cutting surface so that said adjustable apparatus can limit the amount of said sheet of said material cut by said cutting surface;

the adjustable apparatus can be moved to a position so that said designed pattern of said punch is cut fully out of said sheet of said material by the movement of said moveable cutting die;

a frame which holds said adjustable apparatus and said moveable punch cutting die with said moveable cutting die held in the top of said frame and a hole corresponding to said moveable cutting die in the base of said frame wherein said frame aligns said moveable cutting die to said hole allowing for said moveable cutting die to be moved through said hole;

a slot in said frame with said slot extending partially through said frame to accept and restrain said sheet of said material prior to said sheet of said material being punched;

and a means to activate said moveable cutting die moving said cutting die to where it contacts said sheet of said material in said slot cutting said sheet of said material.

17. A machine for piercing sheets of material as claimed in claim 16 wherein said cutting surface is formed in a curved shape.

18. A machine for piercing sheets of material as claimed in claim 16 wherein said cutting surface is formed in a line at an angle to the top surface of said sheet of said material.

19. A machine for piercing sheets of material as claimed in claim 16 wherein said adjustable apparatus is a threaded ring and said means to push down said moveable cutting die is threaded to match the threads on said threaded ring thereby allowing said threaded ring to be rotated and moved up and down along said means thereby adjusting and controlling the amount of travel of said moveable cutting die and acting as said stop.

20. A machine for piercing sheets of material as claimed in claim 16 wherein said adjustable apparatus is a threaded piece of hardware that is located in a matching threaded insert attached to said frame such that said threaded piece of hardware can be rotated within said threaded insert moving said threaded piece of hardware up and down thereby adjusting and controlling the amount of travel of said moveable cutting die and acting as said stop.

21. A machine for piercing sheets of material as claimed in claim 16 wherein said adjustable apparatus are a set of shims of varying thickness with said shims sized

to fit said frame wherein some of said set of shims are selected to allow the desired travel of said moveable cutting die and said selected shims are placed on said frame in such a way that said selected shims act as said stop.

22. A machine for piercing sheets of material as claimed in claim 16 wherein said means to activate said moveable cutting die is a button in contact with said moveable cutting die thereby creating the necessary motion of said moveable cutting die when said button is pushed.

23. A machine for piercing sheets of material as claimed in claim 16 wherein said means to activate said moveable cutting die is a thumb controlled lever in contact with said moveable cutting die thereby creating the necessary motion when said lever is pushed by said thumb.

24. A machine for piercing sheets of material as claimed in claim 16 wherein said frame consists of two arms designed to be held in the hand and squeezed to activate the moveable cutting die thereby creating the necessary motion when said two arms are squeezed.

25. A machine for piercing sheets of material as claimed in claim 16 further comprising a housing to enclose said frame and a portion of said means of activating said moveable cutting die.

26. A machine for piercing sheets of material as claimed in claim 25 wherein a portion of said adjustable apparatus is fabricated as a part of said housing.

27. A machine for piercing sheets of material as claimed in claim 16 further comprising a locking hinge mechanism located at the base of said machine where said locking hinge mechanism allows said base to be moved away from the rest of said machine following said material piercing thereby allowing for easy release of said material and said locking hinge mechanism then allows said base to be returned to the original starting position.

28. A machine for piercing sheets of material as claimed in claim 16 wherein said base of said frame contains two of said slots for said material.

29. A machine for piercing sheets of material as claimed in claim 16 wherein said moveable cutting die and said corresponding hole can be removed from said machine and replaced with another moveable cutting die and another corresponding

hole.

30. An adjustable apparatus that can be added to existing decorative punches comprising:

 said adjustable apparatus acts as a stop to the moveable cutting die containing the punch pattern thereby limiting the amount of said punch pattern cut into the sheet of material being punched;

 said moveable cutting die is designed with a curved cutting surface so that said adjustable apparatus can limit the amount of paper cut by that curved surface;

 said adjustable apparatus can be moved to a position so that said designed pattern of said punch is cut fully out of said sheet of material;

 and said adjustable apparatus can be permanently installed on existing decorative punches.